Remarks

The various parts of the Office Action (and other matters, if any) are discussed below under appropriate headings.

Entry of Amendment

It is believed that the reply raises no new issues, does not require an additional search and/or places the application in a better condition for allowance and/or appeal. Therefore, entry of the amendment is respectfully requested.

Claim Rejections - 35 U.S.C. § 112

Claims 1-5 have been rejected as being indefinite.

As amended, claim 1 recites "A software product containing a medical-imaging visualization application, the software product comprising computer executable instructions embodied on a computer readable medium that are configured when executed...." The rejection of claims 1-5 under 35 U.S.C. § 112 should now be withdrawn.

Claim Rejections - 35 U.S.C. § 101

Regarding the rejections under 35 U.S.C. § 101, claim 1 has been amended to recite "A software product containing a medical-imaging visualization application, the software product comprising computer executable instructions embodied on a computer readable medium that are configured when executed...." The rejection of claims 1-5 under 35 U.S.C. § 101 should now be withdrawn.

Regarding claim 6, the Examiner contends that the “PACS network is not defined in terms of any concrete structure and may be interpreted as consisting merely of software components and/or other logical definitions.” In addition, the Examiner contends a logic device “may also be interpreted as a software component and/or other logical definitions.” (Office Action at page 6).

Claim 6 recites a PACS network including a logic device for executing instructions of a software component...” As such, it is respectfully submitted that claim 6 is directed to a PACS network that includes a physical device (e.g., a logic device) for

executing software instructions. It is unclear how such a device may be interpreted as a software component and/or other logical definitions, as construed by the Examiner. Accordingly, it is respectfully submitted that claim 6 recites sufficient structure for executing software instructions and is directed towards statutory subject matter. Therefore, the rejection of claims 6-13 under 35 U.S.C. § 101 should now be withdrawn.

Claim Rejections - 35 U.S.C. § 103

The Examiner has maintained the previous rejections of the pending claims as being unpatentable over US 5,875,327 (herein "Brandt") in view of US 6,574,629 (herein "Cooke"). Applicant's prior response is hereby incorporated by reference.

According to the Examiner, the features of the independent claims are all found in Brandt except the network being a PACS network and the application being a medical imaging visualization network. The Examiner says these latter features can be found in Cooke. After careful review of Brandt, the Examiner appears to be mistaken and the independent claims recite other features not found in Brandt. This will become apparent from the following discussion.

As explained in the prior response, Applicant describes in his specification a software product and methodology that addresses the problem of how to integrate a computer application program such as a medical imaging visualization application into a PACS network. Typically such applications are provided by a variety of providers and hence each may have a different user interface. These give a non-uniform appearance to the overall network, and also require network users to be familiar with many different interfaces. To address this, PACS network providers may prefer to import only the functionality of the applications, and supplement this with their preferred unitary user interface. This is typically achieved by licensing granular versions of applications. This approach has many difficulties, as explained on pages 3 and 4 of applicant's specification.

To address this, applicant proposes that a visualization application be provided within a software component, where the software component is a model component for use in a model-view-controller architecture. A model component, by definition, provides the fundamental functional aspects of an application. By also providing the software component with an interface having appropriate parameters, the application contained in the software component can be integrated into a PACS network. The parameters are selected to allow this integration. The software component comprises the model

component, whereas the view component and the controller component can be located within the PACS network, and built by the PACS provider so as to give the application the provider's preferred user interface. Thus, the PACS provider obtains the functionality of the application, and can integrate it into his network with the desired look of user interface without having to understand the fundamental operation of the application's functionality, because this is contained within the model component, and the view and controller components can be implemented independently of the contents of the model component by use of the parameters of the interface. See page 5, lines 12-25 of the specification for these and other advantages that are attainable.

Independent claim 1 is directed to a software product containing a visualization application, where the software product is a model component, and has an interface with parameters for allowing integration into a PACS network. The combination of Brandt and Cooke has not been found to describe any such software component. In particular, the combination of Brandt and Cooke has not been found to disclose --*a model component in a model-view-controller software architecture, and having an interface having a set of user interface control parameters and a set of data handling parameters, the sets of parameters being chosen to allow flexible integration of the visualization application into a proprietary Picture Archiving and Communications Systems (PACS) network*, as recited in independent claim 1.

The following addresses additional remarks made by the Examiner in Sections 6-10 of the Office Action in response to arguments raised by the Applicant.

Brandt has been found to disclose using user preference files to configure a client workstation when a user signs on to particular client workstation (col. 5, lines 56-60). Preference files are sent to the client workstation to configure it for a user's particular preference, typically from a server (col. 3, lines 60-64) comprising a preference manager (col. 4, lines 3-9). The preference files may include screen color, mouse configurations and web parameters, i.e., lists of configuration parameters. This allows the user to configure software and hardware of the client workstation (col. 5, lines 45-48). However, in addition to the user preferences there are also a number of other preferences, for example manufacturer preferences (col. 4, lines 15-20). Therefore, to avoid any conflict between different sets of preferences, a hierarchy is implemented, but some preferences in a lower level preference file may take precedence over a higher level preference file (col. 9, lines 14-18). The result of Brandt is that a client workstation is configured to suit the manufacturer, the administrator and users (col. 4, lines 23-25).

In Section 8 of the Office Action, the Examiner contends that Brandt discloses a model-view-controller architecture in that Brandt shows controlling a hierarchical order of different preference files, or models depending on the characteristics associated with the user or users, or views. According to the Examiner, the level at which a user operates in network may be seen as the user's view of the network, as one example. The different preferences (lower-level vs. higher-level) may be seen as different models for operation in the network. Applicant respectfully disagrees.

Section 8 of the Office Action incorrectly equates the claim feature of "a model-view-controller architecture" to "controlling a hierarchical order of different preference files" disclosed in Brandt (col. 9, lines 9-25). Thus, the claimed "model components" are equated to "preference files" disclosed in Brandt. This is erroneous, since the claimed model components are executable software components containing a medical imaging visualization application and cannot be equated to mere lists of preferences.

As set forth in the previous response, Brandt's preference files do not contain a medical-imaging visualization application (or indeed any application) as required by claim 1. Brandt's preference files merely express preferences for configuration parameters such as screen color, mouse operation, and the like. Also, Brandt has not been found to include any mention whatsoever of a model-view-controller software architecture, and nothing described in Brandt appears to have the features of a model-view-controller software architecture. Hence, the preference files in Brandt are not seen as being operable, or configured, to function as a model component in a model-view-controller software architecture.

In Section 9 of the Office Action, the Examiner contends that Brandt has an interface having a set of user interface control parameters and a set of data handling parameters. Applicant respectfully disagrees. The Examiner incorrectly equates the claim feature of "a set of user interface control parameters" and "a set of data handling parameters" to "parameters or configurations of a client workstation" and "configurable software and hardware application systems", respectively disclosed in Brandt. These Brandt features are merely parameters (e.g., screen color or mouse operation) that can be applied to the software or hardware of a client workstation. This is distinct from having a set of parameters that allow a medical imaging visualization application to be integrated with a PACS network such that the model-view-controller can control the application and receive image data from it, as claimed.

This was also discussed in the previous response. Brandt's preference files do not have an interface having a set of user interface control parameters and a set of data handling parameters, as required by the software product of claim 1. Brandt's

preference files are not described as having any kind of interface, which is not surprising since they are merely files that record preferred values for configuration parameters, and do not need to interface with anything. Use of the term "parameter" in Brandt refers to parameters for configuring the hardware and the software, and as best understood not to any interface parameters of the type recited in claim 1. Therefore, Brandt's preference files do not have an interface having parameters selected for integration of an application into a network (PACS or otherwise). The preference files in Brandt are distinct from the claimed set of user interface control parameters and a set of data handling parameters, wherein the sets of parameters are chosen to allow flexible integration of the visualization applications into a network.

The Examiner appears to suggest that applications (e.g., a web browser) that are found on a client workstation of Brandt may be regarded as being model components that are configured (e.g., screen color) using the user preferences of Brandt, such that they can be controlled by a user on a client workstation. However, this is not the same as the claimed invention. The model component of the claim 1 has a set of parameters such that they can be integrated with a model-view-controller software, which allows the model-view-controller to control the model component and to receive data from it. An advantage of the invention set forth in claim 1 is that a medical imaging visualization application can be added to an existing model-view-controller architecture, such that the user does not have to learn how to control the new application, since the controls/views of the new application are the same as those of other applications that are already familiar to the user.

The addition of Cooke does not overcome the fundamental deficiencies of Brandt as a teaching reference vis-a-vis claim 1. While Cooke does describe a PACS network with applications for visualizing medical images, a combination of Brandt and Cooke does not result in the subject matter of claim 1. Any reasonable combination of Brandt and Cooke at most would give a PACS network including a server storing preference files such that a workstation would be configured according to the preferences of a user logging onto that workstation, in the manner of the network in Brandt. Accordingly the rejection of claim 1 under 35 U.S.C. §103(a) should be withdrawn.

Independent claim 6 is directed to a PACS network including a software component having all the features of claim 1. Therefore, claim 6 is also not obvious with regard to Brandt in combination with Cooke, for at least the same reasons as claim 1. Accordingly the rejection of claim 6 under 35 U.S.C. §103(a) should be withdrawn.

With respect to independent claim 14, the Examiner contends that the preference manager of Brandt has different high-level and lower-level software components and the version of the preference manager will differ based on the various implementations of these high and lower level software components. (Office Action at Section 10). Thus, the Examiner appears to be equating "a first version of the application contained in a high-level software component" and "a second version of the application contained in a lower-level software component" with preference files at different levels of the hierarchical arrangement of preference files described in Brandt.

As set forth in the prior response, this characterization is incorrect. The preference files in Brandt are, as mentioned above, merely files that store preferred values of configuration parameters. Brandt's preference files are not software components containing applications, in particular not software components containing data visualization applications, as set forth in claim 14.

The user preferences disclosed in Brandt are merely lists of preferences to configure software and hardware components of a client workstation that are divided into a hierarchy to avoid conflicts. In addition, the "levels" in Brandt (column 9, line 9-14, referenced by the Examiner) refer to the levels in the hierarchical arrangement of the preference files, where administrator preferences are ranked higher than user preferences, for example. In contrast, the terms "high-level software" and "lower-level software" in claim 14 take their usual conventional meaning. There is nothing in the claim or the description to indicate any other interpretation. "Level" in the context of software refers to its position within the functionality of the computer system, with low level referring to programming and processing dealing with the very fundamental inner operation of the computer (and therefore more readily transferable between computer systems) and high level referring to the operations and interactions experienced by and evident to the user (and therefore more specific to an individual system or application). Clearly, these are very different from the hierarchical levels described in Brandt, and Cooke offers little if anything in this context.

Based on the foregoing, the combination of Brandt and Cooke has not been found to disclose at least the following claim features: providing a first version of the application contained in a high-level software component; providing a second version of the application contained in a plurality of lower-level software components; and allowing the integrator to decide between use of the different versions for integrating the application into a PACS network. Accordingly the rejection of claim 14 under 35 U.S.C. §103(a) should be withdrawn.

The remaining claims are dependent claims, so are not obvious for at least the reasons discussed above. The absence of any specific comment regarding the Examiner's contentions relating to the dependent claims should not be viewed as an acquiescence therein. Rather, no comment is needed since the rejections are deficient at least for the reasons discussed above with respect to the independent claims.

Conclusion

In view of the foregoing, request is made for timely issuance of a notice of allowance.

Respectfully submitted,

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